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INDUSTRIAL FISHERY PRODUCTS

SITUATION AND OUTLOOK

1970 ANNUAL REVIEW

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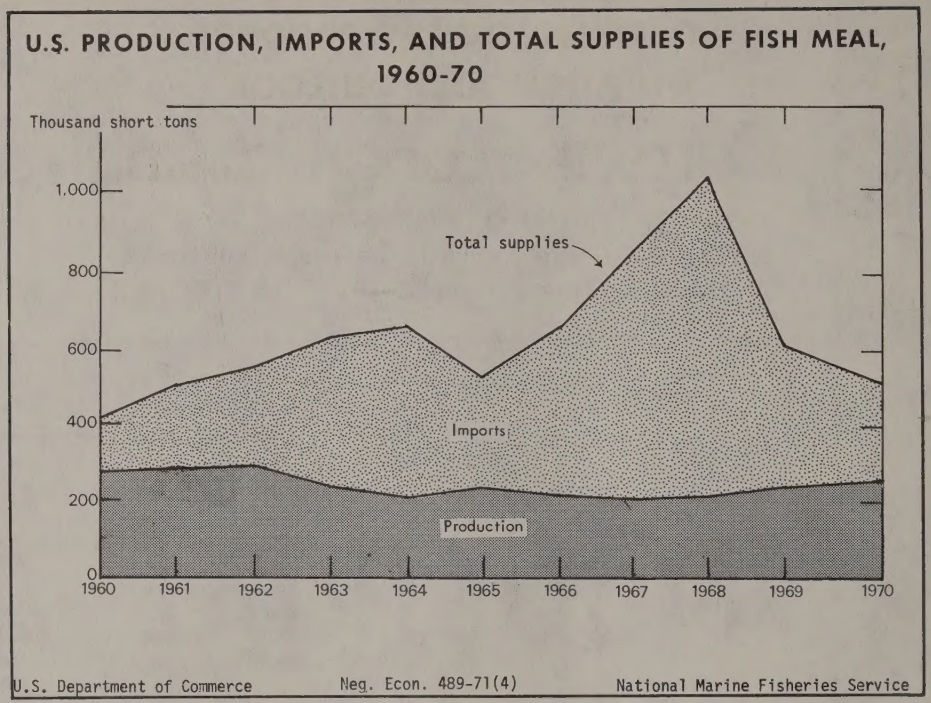

Figure 1

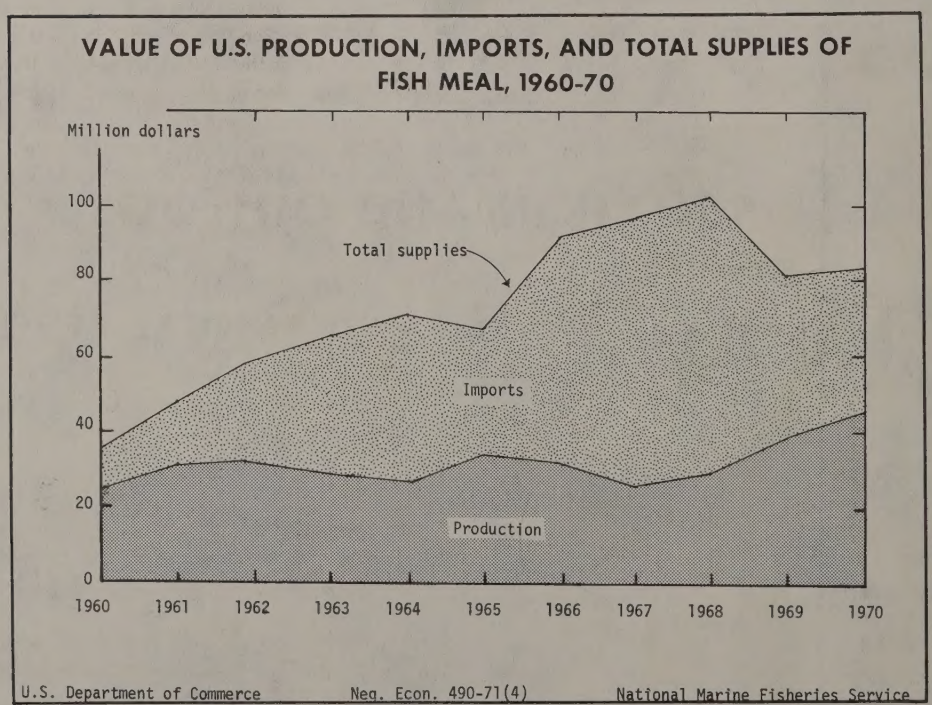

Figure 2

INDUSTRIAL FISHERY PRODUCTS SITUATION AND OUTLOOK

Approved by the

National Marine Fisheries Service
Situation
and Outlook Board

April 6, 1971

Division of Current Economic Analysis

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SUMMARY

FISH MEAL

The total amount of fish meal available in the United States in 1970 was 516,300 tons *1/*—down 14 percent from 1969. Low imports of fish meal were responsible for the low level of the available quantity in 1970. Domestic production of 264,800 tons was the highest since 1962, while imports were down to 251,500 tons —slightly over half of the average annual imports of 1965—69.

The value of fish meal production in 1970 was nearly $47 million, highest on record. The value of imports, at $38 million, was below the value of domestic production for the first time since 1965.

World production of fish meal (excluding the People's Republic of China) was an estimated record high of 5.1 million metric tons *2/* in 1970. The increase in world production was due primarily to an increase in the production of FEO countries *3/*, particularly Peru.

FEO countries produced an estimated 3,207,000 metric tons of fish meal in 1970 and exported three-fourths of that amount. EEC countries *4/* continued to be the most important market for FEO fish meal.

FEO countries held an estimated 836,300 metric tons of fish meal on January 1, 1971—double the amount held at the same time in 1970 but about the same as the stocks held January 1, 1968. These high stocks contributed to a slight decrease in the price of fish meal in the United States during the first months of 1971.

1/ Short tons are used in this report unless otherwise specified.

2/ To convert metric tons to short tons, multiply by 1.1023.

3/ Fishmeal Exporters Organization; member countries are Angola, Chile, Iceland, Norway, Peru, South Africa, and South-West Africa.

4/ European Economic Community; member countries are Belgium, France, West Germany, Italy, Luxemburg, and the Netherlands.

The number of broiler placements in the United States was up again in 1970, but apparent use of fish meal was less than in 1969. We estimate that about 3.3 percent of broiler ration was fish meal in 1970. The main reason for the low utilization was that prices of fish meal were higher than the prices of competing feed ingredients.

Prices of fish meal were record high. The average price of menhaden meal in 1970 was $184.80 per ton, f.o.b. East Coast points, and the average price of Peruvian meal was $194.70.

We estimate that 70,000 to 74,000 tons of fish meal will be produced in the United States during the second quarter of 1971. Assuming that the March price level of $177 per ton for Peruvian meal continues during the second quarter, we estimate that about 160,000 tons of fish meal will be imported. Peru will likely provide slightly more than three-fourths of United States fish meal imports during April-June 1971.

U.S. broiler placements are expected to be below last year during the second quarter of 1971; but if the ratio between fish meal price and soybean price continues at 2.13 : 1—the ratio during the fourth week of March—we expect that about 230,000 to 240,000 tons of fish meal will be used in the second quarter of 1971.

FISH SOLUBLES

The total amount of fish solubles available in the United States in 1970 was 97,600 tons—compared to 81,900 tons in 1969. Nearly all came from domestic production; imports were only 474 tons.

Prices of menhaden solubles in comparison with the prices of fish meal made solubles a fairly good buy for use in animal feed rations. Although improved from 1969, sales of fish solubles in 1970 were relatively slow, considering their price advantage over fish meal.

We estimate that total supplies of fish solubles in the second quarter of 1971 will be about 25,000 tons.

FISH OIL

U.S. production of fish oil was 193.7 million pounds in 1970 (whale oil and sperm oil excluded)—the highest amount since 1962. The value of this production was $17.3 million—the highest on record. Ninety percent of fish oil was made from menhaden in 1970. About 31.4 million pounds of fish oil were used in the United States in industrial products other than animal feed in 1970—3 million pounds less than in 1969. Fish oil exports were 158.8 million pounds—also less than a year ago but 55 million pounds more than the average annual exports in 1965—69. The major markets for United States fish oil in 1970 were the Netherlands, Norway, and the United Kingdom.

The average annual price of menhaden oil was 10.15 cents per pound, f.o.b. East Coast plants—the highest annual average on record. The average monthly price of menhaden oil has increased steadily during the past 2 years and peaked in December 1970 at 10.60 cents per pound.

Fish oil production in the United States during the second quarter of 1971 is estimated at 50 million to 55 million pounds. We expect the domestic use of fish oil to be nearly the same as in 1970, but exports are likely to be below a year ago.

WHALE OIL

The United States imported 55.6 million pounds of whale oil in 1970 and produced about 700,000 pounds. Most of the imports came from Japan.

About 38 million pounds of whale oil were used in the United States in 1970, and about 5 million pounds were exported.

The U.S. Government placed eight species of whales on the list of endangered species on June 2, 1970, to help prevent their extinction. This ruling will end whale oil imports in 1971. The U.S. Government has also proposed to end the domestic licensing of commercial hunting of these whales.

FISH MEAL

REVIEW: 1970

Supply

Fish Meal Supplies in 1970--Lowest in 5 Years

Supplies of fish meal in the United States in 1970 were 516,300 tons—down 14 percent from 1969 and 30 percent from the 1965—69 average (table 1 and fig. 1). This was the lowest amount available since 1965. The low level of supplies was due to low imports throughout the year. Imports were about half of the total available supplies in 1970—compared with 60 percent in 1969 and an average of 70 percent during 1965—69 period.

Fish Meal Production in 1970--Highest Since 1962

U.S. fish meal plants produced about 264,800 tons of fish meal in 1970—up 8 percent from 1969 and the highest amount since 1962 (table 2). The f.o.b. plant value was $47 million, highest on record (table 3 and fig. 2).

About two-thirds of fish meal production came from menhaden—a slightly larger share than a year before. Menhaden meal production in 1970 was 17 percent higher than in 1969 and the highest on record. Most menhaden meal in 1970 was produced in the Gulf Coast area, although this area accounted for a smaller share than the year before (table 4).

The increase in menhaden meal production in 1970 was due to the high landings of menhaden both on the Gulf and the Atlantic Coasts (table 5 and fig. 3). Total landings in 1970 were about 1.81 billion pounds—up one-fifth from 1969 and the highest since 1962.

Menhaden landings on the Gulf Coast area in 1970 broke the record of the previous year. Landings in 1970 were 1.23 billion pounds—compared to 1.15 billion pounds in 1969. Menhaden landings on the Atlantic Coast in 1970 were 577 million pounds—compared to 361 million pounds in 1969. These landings were the highest since 1965. During the summer they were running more than twice as high as the previous year. The November-December catch in the North Carolina fall fishery was, however, less than half of the catch in the year before, and lowest in the past 3 years.

About 42,900 tons or one-sixth of the total U.S. fish meal production in 1970 was made from tuna scrap, mackerel, and anchovies—up 12 percent from 1969. The value of this meal was about $6.5 million—$1.5 million more than in 1969.

Table 1.--Total fish meal available in the United States: production plus imports, by month, 1968-71 1/

Month	1968	1969	1970 2/	1971 2/
	Thousand short tons			
January	93.4	30.0	25.0	37.9
February	51.8	31.4	27.2	19.0
March	59.2	49.9	26.3	
April	74.1	72.7	63.5	
May	89.5	76.9	62.2	
June	111.7	90.0	81.1	
July	136.0	77.1	62.0	
August	123.6	51.7	50.7	
September	78.9	45.2	39.2	
October	69.0	38.8	29.8	
November	85.0	19.3	18.8	
December	110.2	20.4	30.5	
Total 3/	1,082.3	602.5	516.3	

1/ Excludes meal made from shellfish.
2/ Preliminary.
3/ Figures may not add to total because of rounding.

Table 2.--U.S. production of fish meal by month, 1968-71 1/

Month	1968	1969	1970 2/	1971 2/
	Thousand short tons			
January	2.5	2.8	4.9	4.6
February	2.7	3.9	5.8	3.2
March	4.5	4.7	6.9	
April	11.8	14.7	8.5	
May	19.1	31.8	27.5	
June	30.8	35.4	47.5	
July	44.3	40.2	51.7	
August	36.2	33.5	40.4	
September	29.6	35.9	28.3	
October	20.2	19.1	22.1	
November	14.3	12.7	12.8	
December	11.0	9.5	8.2	
Total 3/	227.0	244.1	264.8	

1/ Excludes meal from shellfish.
2/ Preliminary.
3/ Figures may not add to total because of rounding.

Table 3.--Quantity and value of U.S. fish meal production by raw material source, 1965-69 average, 1969, and 1970

Source	Production			Percent of total production		
	1965-69 average	1969	1970 1/	1965-69 average	1969	1970 1/
	Thousand short tons			Percent		
Menhaden 2/	146.5	159.5	186.8	65.0	65.3	70.5
Tuna, mackerel, and anchovy	31.2	38.3	42.9	13.8	15.7	16.2
Unclassified	47.7	46.3	35.1	21.2	19.0	13.3
Total 3/	225.5	244.1	264.8	100.0	100.0	100.0

Source	Value			Percent of total value		
	Million dollars			Percent		
Menhaden 2/	21.6	27.0	34.3	65.9	67.7	73.0
Tuna, mackerel, and anchovy	3.7	5.0	6.5	11.4	12.5	13.8
Unclassified	7.5	7.9	6.2	22.7	19.8	13.2
Total 3/	32.8	39.8	47.0	100.0	100.0	100.0

1/ Preliminary.
2/ Includes a small quantity of other species.
3/ Figures may not add to total because of rounding.

Table 4.--Menhaden meal production by area, 1965-69 average, 1969, and 1970 1/

Area	1965-69 average	1969	1970 2/	1965-69 average	1969	1970 2/
	Thousand short tons			Percent		
Atlantic Coast	52.7	39.0	60.7	36.0	24.5	32.5
Gulf Coast	93.8	120.5	126.2	64.0	75.5	67.5
Total 3/	146.5	159.5	186.8	100.0	100.0	100.0

1/ Includes a small amount of meal from other species.
2/ Preliminary.
3/ Figures may not add to total because of rounding.

Table 5.--Menhaden landings by area, 1965-69 average, 1969, and 1970

Area	1965-69	1969	1970 1/
	Million pounds		
Atlantic Coast	485.6	361.4	577.0
Gulf Coast	898.5	1,154.9	1,230.9
Total 2/	1,384.0	1,516.3	1,807.9

1/ Preliminary.
2/ Figures may not add to total because of rounding.

The increase in the production of tuna, mackerel, and anchovy meal was partially due to the increased landings of anchovy in California during 1970. The catch in January-May 1970—the second half of the 1969 season—was more than double the landings of the same period in 1969. Landings in the current California anchovy season, which began August 1, 1970, for the Northern Permit Area and September 15 for the Southern Permit Area, were 58,900 tons at the end of the year—up 18 percent from the same period in 1969. Total landings for the season up to the end of March 1971, were 76,000 tons—compared to 75,000 tons a year ago. The decrease in landings during the first quarter of 1971 was due to the closure of the season for the month of February and below normal water temperature. The season is scheduled to close on May 15, 1971, or sooner if the quota 110,000 tons is reached.

Production of meal from sea herring, groundfish, alewives, and other species was 34,800 tons in 1970 —down from the previous year (table 3).

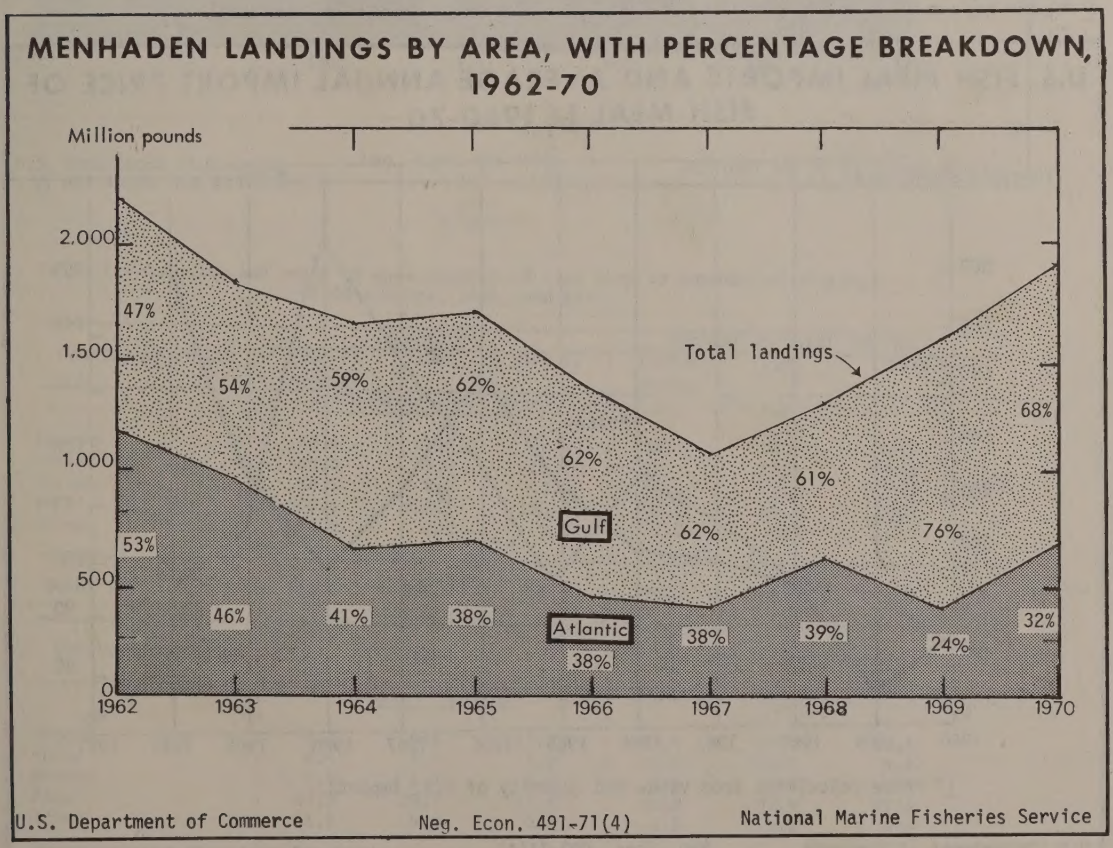

Figure 3

U.S. Imports--Lowest in 9 Years

About 251,500 tons of fish meal were imported in 1970—down 30 percent from 1969 and the lowest imports in 9 years (tables 6 and 7, and fig. 4). Imports were low in 1970 because high prices of fish meal caused U.S. feed mixers to replace fish meal with cheaper products. The value of U.S. fish meal imports in 1970 was $37.7 million—down one-third from the 1965—69 average.

Table 6.--U.S. imports of fish meal by month, 1968-71

Month	1968	1969	1970 1/	1971 1/
	Thousand short tons			
January	90.9	27.2	20.1	33.3
February	49.0	27.6	21.4	15.8
March	54.7	45.2	19.4	
April	62.3	58.0	54.9	
May	70.4	45.1	34.7	
June	80.9	53.6	33.5	
July	91.7	36.8	10.2	
August	87.4	18.3	10.3	
September	49.3	9.3	10.9	
October	48.8	19.7	7.8	
November	70.7	6.6	6.0	
December	99.3	11.0	22.3	
Total 2/	855.3	358.4	251.5	

1/ Preliminary.
2/ Figures may not add to total because of rounding.

Imports of Peruvian meal were about 153,200 tons in 1970, compared to 218,100 tons in 1969. In both years, imports from Peru were about 60 percent of the total United States fish meal imports (table 7 and fig. 5). Annual United States imports from Peru in 1965—69 averaged 356,600 tons—69 percent of the total United States imports of fish meal.

While imports from Peru were down, imports from Canada and Norway increased in 1970. Canada's share of the total United States fish meal imports in 1970 was 30 percent—up from 19 percent in 1969 and 10 percent for the 1965—69 period. Imports from Norway were 9,200 tons—up 900 tons from the previous year but only one-fourth of the 1965—69 average imports from that country.

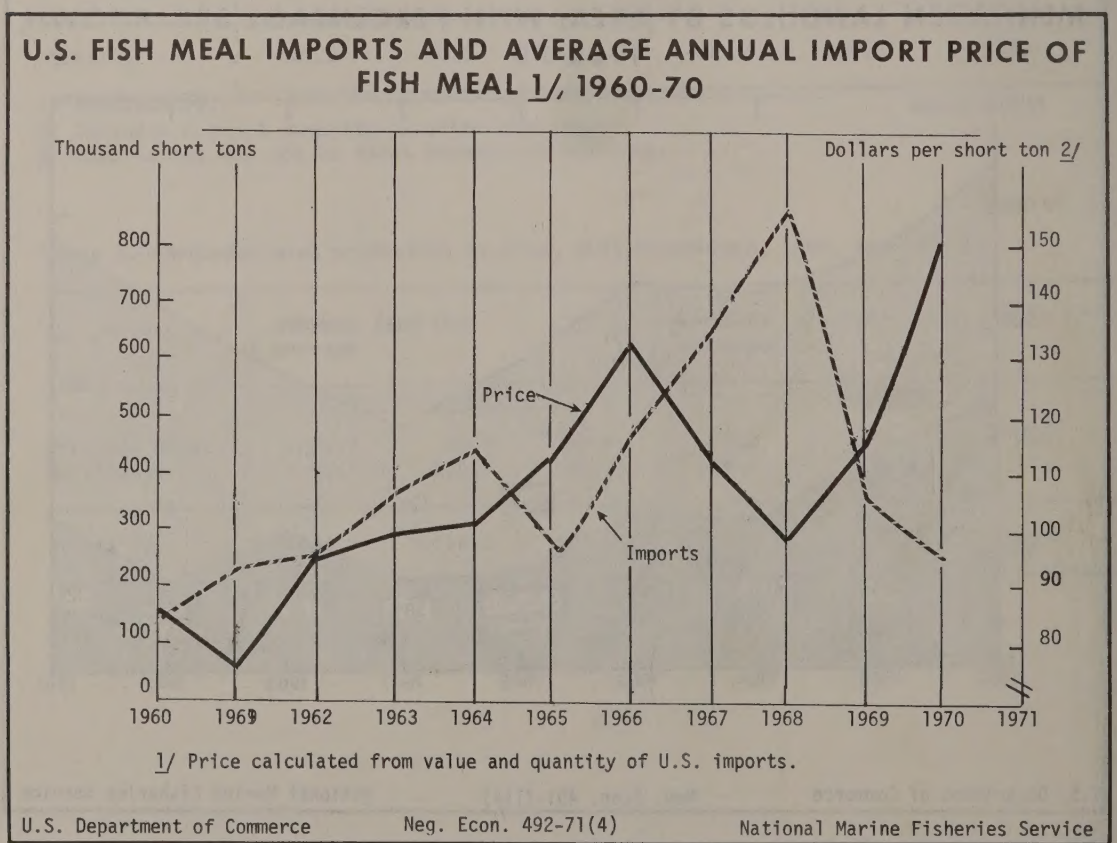

Figure 4

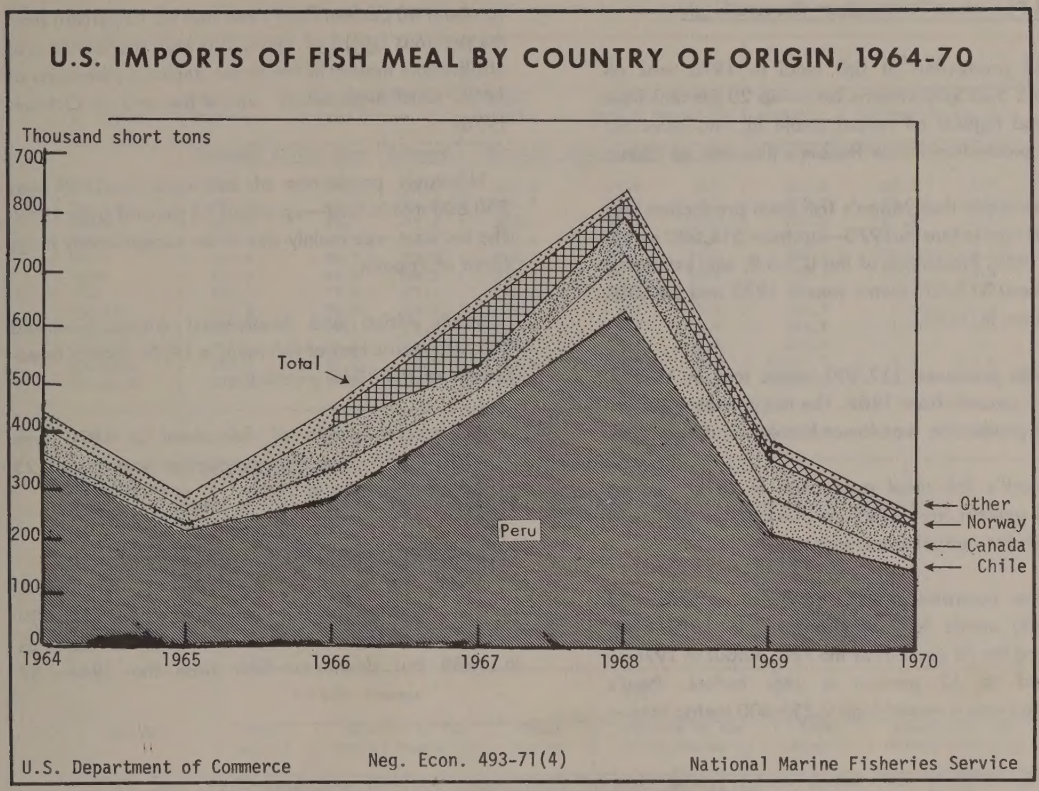

Figure 5

Table 7.--Quantity and value of U.S. imports of fish meal by country of origin, 1965-69 average, 1969, and 1970

Country of origin	Quantity			Percent of total imports		
	1965-69 average	1969	1970 1/	1965-69 average	1969	1970 1/
	Thousand short tons			Percent		
Canada	53.4	67.8	75.5	10.3	18.9	30.0
Chile	60.0	59.9	11.6	11.6	16.7	4.6
Norway	36.7	8.3	9.2	7.1	2.3	3.7
Peru	356.6	218.1	153.2	69.1	60.9	60.9
Other	10.0	4.2	2.0	1.9	1.2	0.8
Total 2/	516.7	358.4	251.5	100.0	100.0	100.0

Country of origin	Value			Percent of total values		
	Million dollars			Percent		
Canada	7.7	9.5	12.2	13.4	23.0	32.4
Chile	6.4	6.2	1.6	11.2	15.0	4.2
Norway	4.9	1.4	1.8	8.5	3.5	4.8
Peru	37.3	23.7	21.8	65.0	57.4	57.8
Other	1.1	0.4	0.3	1.9	1.1	0.8
Total 2/	57.4	41.3	37.7	100.0	100.0	100.0

1/ Preliminary.
2/ Figures may not add to total because of rounding.

World Fish Meal Production--Record High

World production of fish meal in 1970 was an estimated 5,125,000 metric tons—up 20 percent from 1969 and highest on record (table 8). This does not include production in the People's Republic of China.

We estimate that Japan's fish meal production was 550,000 metric tons in 1970—up from 518,000 metric tons in 1969. Production of the U.S.S.R. was estimated to be about 375,000 metric tons in 1970 and 340,000 metric tons in 1969.

Canada produced 112,300 metric tons in 1970—down 11 percent from 1969. The major reason for the reduced production was lower herring landings.

Denmark's fish meal production in 1970 was up about 4 percent from 1969 despite a large decline in the catch for reduction purposes.

Member countries of FEO produced an estimated 3,206,000 metric tons of fish meal in 1970. Peru accounted for 70 percent of the FEO output in 1970—compared to 62 percent a year before. Peru's production was a record-high 2,253,400 metric tons—up about 40 percent from 1969 and up 15 percent from the previous record of 1968. This high production was attributable mainly to the larger anchovy year-class of 1969, which was fished up to the end of October 1970.

Norway's production of fish meal in 1970 was 350,800 metric tons—up about 13 percent from 1969. The increase was mainly due to an exceptionally large catch of capelin.

South Africa and South-West Africa produced 303,200 metric tons of fish meal in 1970—about three-fourths of the 1969 production.

Chilean production of fish meal in 1970 was 162,700 metric tons This production was about 25 percent higher than in 1969.

FEO Exports--Nearly the Same as 1969

FEO countries exported an estimated 2,515,000 metric tons of fish meal in 1970—nearly the same as in 1969 but down one-fifth from the 1965–69

Table 8.--FEO 1/ and total world production of fish meal, 1965-69 average, 1969, and 1970

Country	1965-69 average	1969	1970 2/	1965-69 average	1969	1970 2/
	Thousand metric tons			Percent of FEO production		
Angola	58.1	89.6	3/67.4	2.2	3.4	2.1
Chile	142.6	130.4	162.7	5.3	5.0	5.1
Iceland	116.8	63.9	3/69.1	4.4	2.4	2.2
Norway	386.7	309.2	350.8	14.5	11.9	10.9
Peru	1,620.3	1,611.0	2,253.4	60.5	61.7	70.2
South Africa and South-West Africa	350.1	406.4	303.2	13.1	15.6	9.5
Total FEO	2,674.6	2,610.5	3,206.6	100.0	100.0	100.0
Total world 3/, 4/	4,135.3	4,275.1	5,125.0			
Percent FEO is of world				64.7	61.1	62.6

1/Fishmeal Exporters Organization.
2/Preliminary.
3/Estimated.
4/FEO countries plus all other countries except the People's Republic of China.

Table 9.--Total FEO 1/ exports of fish meal and FEO exports to the United States, by month, 1968-70

Month	1968			1969			1970 2/		
	Total exports	Exports to the United States 3/		Total exports	Exports to the United States 3/		Total exports	Exports to the United States 3/	
	Thousand metric tons		Percent	Thousand metric tons		Percent	Thousand metric tons		Percent
January	279.5	79.1	28.3	214.9	18.6	8.6	212.9	12.2	5.7
February	283.9	41.5	14.6	244.7	18.9	7.7	263.2	13.2	5.0
March	260.9	44.7	17.1	278.6	35.7	12.8	281.9	11.2	4.0
April	259.8	52.9	20.4	280.4	47.8	17.0	257.0	45.4	17.7
May	246.4	56.7	23.0	310.1	37.3	12.0	274.6	26.2	9.5
June	277.8	68.7	24.7	239.8	44.8	18.7	201.9	26.0	12.9
July	277.5	77.0	27.7	235.1	28.3	12.0	250.8	4.3	1.7
August	198.9	71.0	35.7	161.3	9.1	5.6	167.7	1.5	0.9
September	230.1	37.1	16.1	119.1	0.5	0.4	134.1	1.7	1.3
October	248.4	35.5	14.3	148.1	10.1	6.8	113.5	-	-
November	287.9	59.7	20.7	173.9	2.6	1.5	4/162.5	0.2	0.1
December	291.4	84.6	29.0	154.3	6.1	4.0	4/194.7	16.1	8.3
Total 5/	3,142.6	708.4	22.5	2,560.3	259.8	10.1	4/2,515.3	157.9	6.3

1/Fishmeal Exporters Organization; members are those countries listed in table 8.
2/Preliminary.
3/Based on imports of fish meal from FEO countries as reported by the U.S. Department of Commerce, Bureau of the Census.
4/Estimated.
5/Figures may not add to total because of rounding.

Table 10.--Total FEO 1/ exports of fish meal and FEO exports to the United States, by country, 1965-69 average, 1969, and 1970

Country	1965-69 average			1969			1970 2/		
	Total exports	Exports to the United States 3/		Total exports	Exports to the United States 3/		Total exports	Exports to the United States 3/	
	Thousand metric tons		Percent	Thousand metric tons		Percent	Thousand metric tons		Percent
Angola	56.5	0.1	0.2	95.6	-	-	4/58.7	-	-
Chile	134.6	54.4	40.4	144.9	54.4	37.5	99.9	10.5	10.5
Iceland	114.8	-	-	59.2	-	-	4/61.5	5/	5/
Norway	351.6	33.3	9.5	303.7	7.5	2.5	249.2	8.3	3.3
Peru	1,572.8	323.5	20.6	1,655.6	197.9	12.0	1,872.8	139.0	7.4
South Africa and South-West Africa	266.3	2.1	.8	301.5	-	-	173.2	-	-
Total 6/	2,496.4	413.5	16.6	2,560.3	259.8	10.1	2,515.3	157.9	6.3

1/Fishmeal Exporters Organization: members are those countries listed in the table.
2/Preliminary.
3/Based on imports of fish meal from FEO countries as reported by the U.S. Department of Commerce, Bureau of the Census.
4/Estimated.
5/Less than 0.05.
6/Figures may not add to total because of rounding.

average exports (tables 9 and 10). Exports of Peru and Iceland were higher in 1970 than in 1969, but exports of other FEO countries were lower.

About 41 percent of FEO fish meal exports went to EEC countries in 1970—slightly more than a year before. West Germany took the greatest share of FEO exports, 595,500 metric tons or nearly one-fourth of the total FEO exports (table 11).

FEO shipments of fish meal to East European countries were 469,300 metric tons in 1970—up 43

Table 11.--FEO 1/ exports of fish meal, by country of destination, 1968-70

Country	FEO exports			Percent of total FEO exports		
	1968	1969	1970 2/	1968	1969	1970 2/
	Thousand metric tons			Percent		
EEC						
Belgium	64.0	57.4	44.3	2.0	2.2	1.8
France	74.2	61.6	68.9	2.4	2.4	2.7
Germany, West	583.5	558.6	595.5	18.6	21.8	23.7
Italy	113.0	105.2	109.8	3.6	4.1	4.4
Netherlands	253.2	239.4	219.9	8.0	9.4	8.7
Total	(1,087.9)	(1,022.2)	(1,038.4)	(34.6)	(39.9)	(41.3)
United States 3/	666.9	247.3	176.4	21.2	9.7	7.0
East European Countries						
Czechoslovakia	43.7	27.6	35.6	1.4	1.1	1.4
Germany, East	92.1	90.2	101.1	2.9	3.5	4.0
Hungary	28.4	34.6	36.1	0.9	1.3	1.4
Poland	103.6	118.7	144.3	3.3	4.6	5.8
Yugoslavia	53.0	55.1	118.1	1.7	2.2	4.7
Other	9.7	2.1	33.9	.3	.1	1.4
Total	(330.5)	(328.3)	(469.3)	(10.5)	(12.8)	(18.7)
Other						
Australia	28.2	31.8	16.9	.9	1.2	0.7
Finland	31.6	27.0	24.2	1.0	1.1	1.0
Japan	137.5	86.4	86.3	4.4	3.4	3.4
Mexico	84.9	57.9	86.6	2.7	2.3	3.4
Spain	114.4	137.5	113.3	3.6	5.4	4.5
Sweden	56.0	61.1	50.3	1.8	2.4	2.0
United Kingdom	399.5	347.7	251.7	12.7	13.5	10.0
Venezuela	34.1	25.1	23.0	1.1	1.0	.9
Other	171.2	188.0	178.9	5.4	7.3	7.1
Total 4/	(1,057.3)	(962.5)	(831.3)	(33.6)	(37.6)	(33.0)
Total	3,142.6	2,560.3	2,515.3	100.0	100.0	100.0

1/ Fishmeal Exporters Organization.
2/ Export figures for Angola and Iceland are estimates.
3/ Based on export figures reported by the FEO countries.
4/ Figures may not add to total because of rounding.

percent from the previous year. East European countries had nearly a fifth of the total FEO exports of fish meal. Poland, Yugoslavia, and East Germany were the most important markets for FEO fish meal in East Europe.

About 7 percent of the total FEO fish meal shipments in 1970 went to the United States (table 11)—less tha in 1969 and only a quarter of 1968 shipments.

FEO fish meal exports to several other countries als declined in 1970. The greatest tonnage reductions wer in the shipments to the United Kingdom, Spain, and th Netherlands.

Peru's position as a leading exporter among FEO countries improved in 1970. Peru accounted for three quarters of the FEO exports in 1970—a greater proportion than any other year recorded. Peru shipped 1,872,800 metric tons of fish meal in 1970—up 13 percent from the previous year. The volume of exports remained, however, below the record-high exports of 1968, mainly because of lower sales to the United States.

West Germany was Peru's most important market for fish meal in 1970, taking about 26 percent of the total Peruvian fish meal exports. Peru's exports to West Germany were 487,400 metric tons in 1970.

Only about 7 percent of Peru's exports came to the United States in 1970—compared with 12 percent a year before and about 28 percent in 1968. The major reason for the low exports to the United States in 1970 was the high price of fish meal asked by the Peruvian Government sales organization, EPCHAP (Empresa Publica de Comercializacion de Harina y Aceite de Pescado).

Despite high prices of Peruvian fish meal in the world market, East European countries increased their fish meal purchases from Peru. Peru exported 422,700 metric tons to East European countries in 1970—up 58 percent from 1969. In 1970, Peru exported 118,100 metric tons to Yugoslavia, more than double the previous year, and 112,800 metric tons to Poland.

The increase of fish meal exports to EEC and Eastern European countries was attributed to the strong demand for protein meals in these countries. The need for protein meals was reflected also in the record shipments of U.S. soybean meal to these countries.

FEO Fish Meal Stocks on January 1, 1971--Record High

Stocks of fish meal held by FEO countries on January 1, 1971, were an estimated 836,300 metric tons—more than twice the stocks held at the same time in 1970 but only narrowly up from the previous January 1 record stocks of 1968 (table 12 and fig. 6). Peru held over three quarters of FEO stocks on January 1 of this year—about the same proportion as a year ago. Because of excellent catch of anchovies in 1970 and high price policies of EPCHAP, fish meal stocks in Peru on January 1, 1971 were a record high 654,400 metric tons.

Norway held 13 percent of FEO fish meal on January 1 this year, more than twice the stocks of the same date a year earlier. With 5 percent of the total FEO stocks, Chile was the third largest holder of fish meal. At the beginning of the year, stocks in Chile were more than 7 times the stocks of January 1 a year ago.

Table 12.--FEO 1/ fish meal stocks held January 1, 1966-70 average, 1970, and 1971

Country	1966-70 average	1970	1971 2/	Percent of FEO total stocks: 1966-70 average	1970	1971 2/
	Thousand metric tons			Percent		
Angola	7.5	8.7	3/12.9	1.3	2.2	1.5
Chile	17.1	5.8	42.6	3.1	1.5	5.1
Iceland	19.8	1.3	3/ 4.3	3.6	0.3	0.5
Norway	97.1	42.6	108.9	17.5	10.9	13.0
Peru	382.3	306.9	654.4	68.8	78.4	78.3
South Africa and S W Africa	31.5	26.2	13.3	5.7	6.7	1.6
Total 4/	555.3	391.4	3/836.4	100.0	100.0	100.0

1/ Fishmeal Exporters Organization: members are those countries listed in the table.
2/ Preliminary.
3/ Estimated.
4/ Figures may not add to total because of rounding.

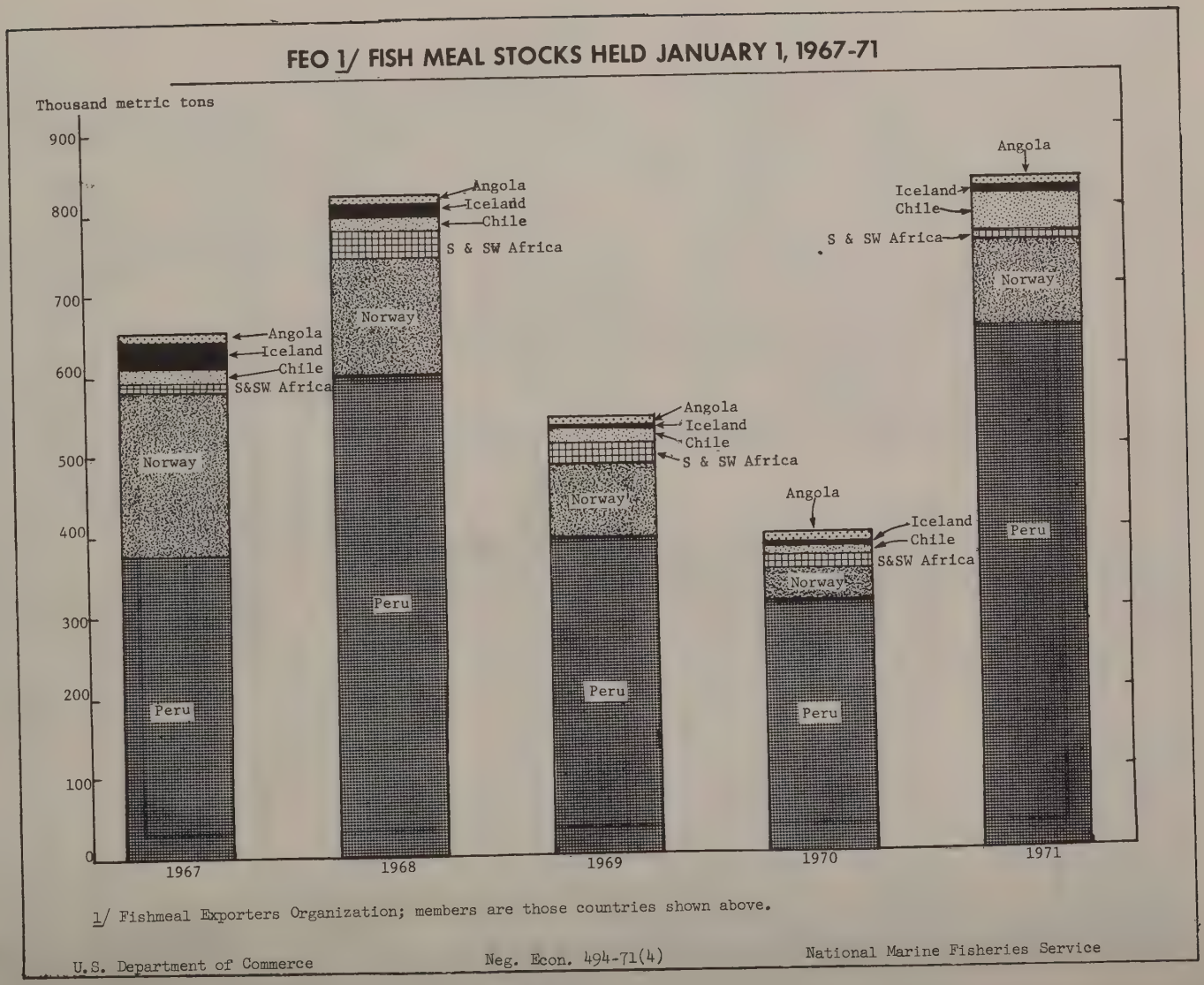
FEO 1/ FISH MEAL STOCKS HELD JANUARY 1, 1967-71
Thousand metric tons
900
800
700
600
500
400
300
200
100
0
Angola
Iceland
Chile
S&SW Africa
Norway
Peru
S & SW Africa
1967
1968
1969
1970
1971
1/ Fishmeal Exporters Organization; members are those countries shown above.
U.S. Department of Commerce
Neg. Econ. 494-71(4)
National Marine Fisheries Service

Figure 6

Table 13.--FEO fish meal stock-sales ratios 1/, by month, 1968-70

Month	1968	1969	1970 2/
	-Ratio-		
January	2.87	2.50	2.09
February	2.90	2.08	1.85
March	3.03	1.83	1.87
April	3.10	2.13	2.53
May	3.47	1.94	2.72
June	2.88	2.13	3.23
July	2.39	1.65	2.15
August	2.82	1.66	2.38
September	2.47	1.88	3.04
October	2.55	1.72	5.03
November	2.26	1.39	3/4.20
December	1.99	1.79	3/3.95
Average	2.73	1.89	2.92

1/ Stocks are average of beginning and end of month-sales equal exports plus local consumption.
2/ Preliminary.
3/ Estimated.

South Africa and South-West Africa were the only FEO member countries that held smaller stocks on January 1, 1971, than the year before. The stocks were about half of those a year before and comprised less than 2 percent of total FEO stocks.

To evaluate the significance of changes of stocks, we have related the levels of stocks and the volume of sales. Stock-sales ratios eliminate the sometimes misleading impressions of expanding stock levels, which may have been dictated by expanding sales. The monthly stock-sales ratios of FEO member countries in 1970 averaged 2.9 : 1 compared to 1.9 : 1 in 1969 and 2.7 : 1 in 1968 (table 13). These ratios suggest that, on the average, stocks in 1970 were built up beyond the requirements of sales. This situation is especially evident during the last 3 months of 1970 when FEO countries had 4 to 5 months' sales in stock. Peru, with the largest share of FEO stocks, had an average stock-sales ratio of 5.4 : 1 during the last quarter of 1970. To relieve the burden of stocks, Peru closed anchovy fishing in most ports during January-February 1971, imposed a 1.2 million ton catch quota for March, and also relaxed prices slightly.

Table 14.--Broiler chick placements in 22 States, and average broiler price at the farm, by month, 1968-71

Month	1968		1969		1970		1971 1/	
	Chicks placed	Broiler price	Chicks placed	Broiler price	Chicks placed	Broiler price	Chicks placed	Broiler price
	Million	Cents/lb.	Million	Cents/lb.	Million	Cents/lb.	Million	Cents/lb.
January	196.4	13.5	201.2	14.1	288.5	14.8	280.5	13.0
February	199.5	14.6	211.8	14.9	240.7	14.3		
March	261.0	14.6	282.9	15.1	251.4	14.8		
April	215.1	14.2	234.0	14.7	257.4	13.7		
May	274.1	14.6	295.9	15.5	318.6	13.9		
June	218.7	15.0	235.3	15.9	252.5	13.3		
July	208.5	15.5	220.4	17.5	230.6	13.6		
August	248.5	14.8	265.4	16.5	280.5	13.2		
September	178.3	14.1	204.5	15.7	198.6	13.4		
October	184.6	12.8	204.8	14.8	242.9	12.8		
November	242.1	13.6	270.6	14.4	217.2	12.9		
December	194.8	13.4	219.4	13.6	221.9	11.8		
Total placements 2/ and average price3/	2,621.7	14.1	2,846.2	15.2	3,000.9	13.5		

1/ Preliminary.
2/ Figures may not add to total because of rounding.
3/ Weighted average.

Sources: Commercial Broilers: Annual Production and Weekly Placements, U.S. Department of Agriculture, Statistical Reporting Service, and Poultry and Egg Situation, U.S. Department of Agriculture, Economic Research Service.

Demand

Broiler Chick Placements in 1970--Up 5 Percent From 1969

In 1970, about 3.0 billion broiler chicks were placed on farms in the 22 leading broiler-producing States (table 14). This number was about 5 percent more than in 1969. Although broiler placements were higher in 1970 than in 1969, apparent use of fish meal declined. A preliminary estimate by the U.S. Department of Agriculture shows that broilers consumed about 11,500,000 tons of feed in 1970. If we assume that 70 to 80 percent of the total available fish meal in the United States is used in broiler feed, and fish meal stocks do not change substantially from year to year, then 350,000 to 405,000 tons of fish meal were used in broiler feed rations. Thus, 3.1 to 3.5 percent of the broiler ration was fish meal in 1970. Comparable estimates show that fish meal was 3.2 to 3.7 percent of the average broiler ration in 1969 and 6 to 7 percent in 1968. The relatively low level of usage of fish meal in broiler rations in 1969 and in 1970 was due to the high prices of fish meal.

Average Soybean Meal Prices for 1970--Up From 1969

The average annual price of soybean meal at Decatur, Ill., was $87.10 per ton—$4.20 higher than the 1969 average and $2.10 above the 1968 annual average (table 15). The high prices of 1970 reflect continued strong demand for protein feeds in world markets.

Table 15.--Average monthly price of soybean meal 1/ at Decatur, Ill., 1968-71

Month	1968	1969	1970	1971
	Dollars per short ton			
January	81.30	79.50	97.60	86.10
February	80.20	78.40	95.60	82.40
March	80.40	80.10	79.60	
April	80.90	81.30	83.10	
May	81.90	84.90	78.90	
June	89.10	88.20	82.70	
July	92.00	86.20	92.50	
August	94.50	84.10	92.50	
September	95.50	82.70	88.20	
October	85.30	82.10	83.80	
November	79.40	76.90	82.50	
December	79.40	90.40	88.20	
Average 2/	85.00	82.90	87.10	

1/ 50 percent protein, bulk.
2/ Simple average.

Source: Feed Market News, U.S. Department of Agriculture, Consumer and Marketing Service, Grain Division.

Table 16.--Ratio of Peruvian fish meal price 1/ to soybean meal price 2/, by month, 1968-71

Month	1968	1969	1970	1971
	Price ratio			
January	1.48	1.75	2.02	2.14
February	1.48	1.80	1.92	2.17
March	1.44	1.75	2.42	
April	1.42	1.80	2.38	
May	1.61	1.90	2.56	
June	1.57	1.90	2.37	
July	1.56	2.01	2.01	
August	1.46	2.05	1.94	
September	1.39	2.08	2.09	
October	1.51	2.36	2.26	
November	1.65	2.63	2.28	
December	1.74	2.26	2.11	
Average	1.54	1.89	2.24	

1/ f.o.b. East Coast ports, 65 percent protein, as quoted at New York City.
2/ Wholesale at Decatur, Ill., 50 percent protein, bulk.

The weighted average ratio of fish meal price to soybean meal price in 1970 was 2.24 : 1—compared to 1.89 : 1 in 1969, reflecting the weaker competitive position of fish meal compared to soybean meal in 1970 (table 16).

Prices

Fish Meal Prices--Breaking Last Year's Record

The average annual price of menhaden meal (60 percent protein) in 1970 was $184.80 per ton, f.o.b. East Coast points—$10.50 per ton higher than the 1969 average (table 17 and fig. 7). Calculated on the basis of protein content 5/, the 1970 price was $3.08 per unit protein—compared to $2.90 in 1969. Prices declined towards the end of the year, and the December average was $187.50 per ton.

Prices of menhaden meal declined slightly during the first quarter of 1971. The February price was $184.20 per ton—about the same as the annual average for 1970 but $2.30 per ton below the January price. The nominal March price was $180.00 per ton.

5/ Price per ton of meal divided by the percent of protein content.

Table 17.--Average monthly price of menhaden meal 1/ f.o.b. East Coast and Gulf points, 1968-71

Month	1968	1969	1970	1971 2/
	-Dollars per short ton-			
January	3/131.00	149.25	195.90	4/186.50
February	3/131.00	153.00	196.50	4/184.20
March	3/131.00	153.00	189.90	180.00
April	3/131.00	3/154.00	197.50	
May	3/131.00	174.00	197.50	
June	149.00	172.60	193.80	
July	149.65	171.90	179.00	
August	149.00	168.90	172.90	
September	145.00	171.60	177.80	
October	141.60	189.30	187.50	
November	140.50	200.10	189.10	
December	145.10	199.25	187.50	
Average 5/:	145.30	174.30	184.80	

1/ 60 percent protein, bagged, as quoted by brokers at New York City.
2/ Bulk.
3/ Nominal price as presented in the Oil, Paint, and Drug Reporter.
4/ Mainly meal at Gulf points.
5/ Average weighted by monthly production of menhaden meal.

Table 18.--Average monthly price of tuna and mackerel meal 1/ at Los Angeles, 1968-71

Month	1968	1969	1970	1971 2/
	-Dollars per short ton-			
January	123.00	132.60	172.50	150.00
February	124.80	135.00	172.50	150.00
March	124.80	133.80	177.00	
April	115.50	127.80	178.50	
May	117.00	138.60	180.00	
June	121.50	145.80	180.00	
July	127.50	147.00	180.00	
August	132.00	147.00	168.00	
September	132.00	150.00	165.00	
October	132.00	168.00	162.00	
November	132.00	177.00	161.00	
December	132.00	172.20	159.00	
Average 3/:	125.85	146.15	170.15	

1/ 60 percent protein, bagged, as quoted by brokers at Los Angeles.
2/ Bulk.
3/ Average weighted by monthly production.

The average annual price of tuna, mackerel, and anchovy meal was $170.15 per ton, as quoted by brokers in Los Angeles—up $24.00 from the 1969 average (table 18). The 1970 average price equals $2.84 per unit of protein, about 8 percent less than for menhaden meal. The 1969 average price for tuna and mackerel meal was $2.44 per unit of protein. The monthly prices for tuna, mackerel, and anchovy meal in 1970 were highest in May to July, when $180 per ton was quoted. After July prices declined steadily to the December price of $159.

Table 19.--Average monthly price of Peruvian fish meal 1/ f.o.b. East Coast ports, 1968-71

Month	1968 2/	1969 2/	1970 3/	1971 4/
	-Dollars per short ton-			
January	120.20	139.50	197.50	184.10
February	119.00	141.00	183.50	178.90
March	116.00	140.50	192.70	177.30
April	115.20	146.80	198.00	
May	131.90	161.00	202.10	
June	140.00	168.00	195.80	
July	143.20	173.50	185.90	
August	137.90	172.10	179.10	
September	132.75	172.00	184.00	
October	129.20	193.40	189.80	
November	131.00	202.40	187.80	
December	138.10	204.00	186.40	
Average 5/:	130.95	157.10	194.70	

1/ 65 percent protein, f.o.b. East Coast ports.
2/ Bagged.
3/ January through March bagged, April bulk, May through July bulk and bagged, August through December bulk.
4/ Bulk.
5/ Average weighted by monthly imports of Peruvian fish meal.

The weighted average price of Peruvian fish meal in 1970 was $194.70 per ton, f.o.b. East Coast ports—up $37.60 per ton from 1969 (table 19). On the basis of protein equivalent, the average price in 1970 was $3.00 per unit of protein—compared to $2.42 per unit of protein in 1969. The monthly price of Peruvian fish meal declined from $202.10 per ton in May to $179.10 per ton in August—the lowest monthly price of the year. During September-December, prices increased slightly from this summer low.

During the first 2 months in 1971, prices of Peruvian meal continued a slight declining trend. The February average, quoted by New York City brokers, was $178.90 per ton, f.o.b. East Coast ports—$4.60 per ton below the corresponding month a year before.

The average annual price of Peruvian fish meal, c.i.f. European ports, was $178 per short ton in 1970—compared to $161 per ton in 1969.

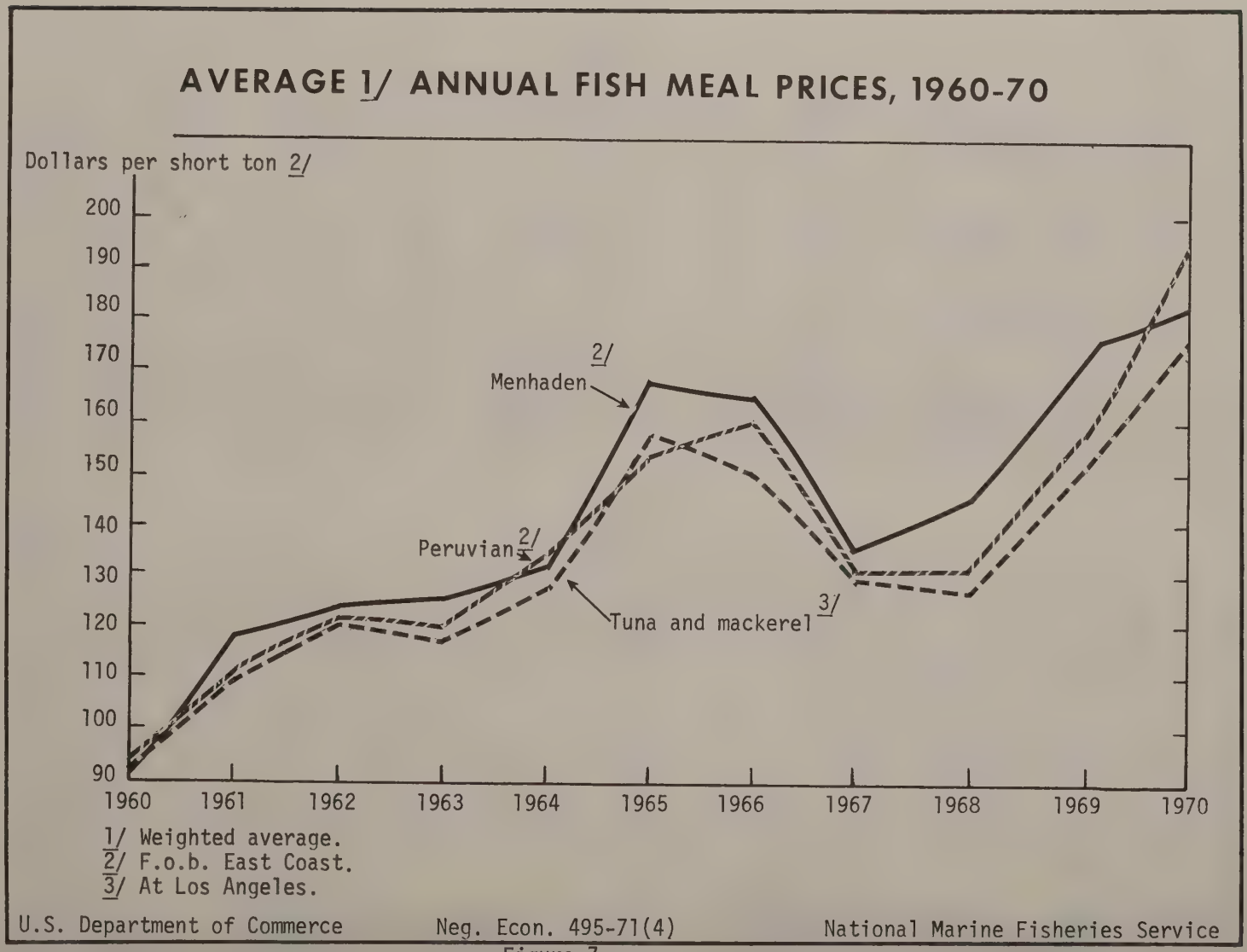
AVERAGE 1/ ANNUAL FISH MEAL PRICES, 1960-70
Dollars per short ton 2/
200
190
180
170
160
150
140
130
120
110
100
90
1960
1961
1962
1963
1964
1965
1966
1967
1968
1969
1970
Menhaden 2/
Peruvian 2/
Tuna and mackerel 3/
1/ Weighted average.
2/ F.o.b. East Coast.
3/ At Los Angeles.
U.S. Department of Commerce
Neg. Econ. 495-71(4)
National Marine Fisheries Service

Figure 7

OUTLOOK: APRIL-JUNE 1971

Supply

We estimate that 70,000 to 74,000 tons of fish meal will be produced in the United States during the second quarter of 1971—compared to 83,600 tons in April-June 1970. Menhaden meal will likely comprise about two-thirds of the total fish meal production.

The total catch in the second quarter of 1971 may be considerably below the catch of the second quarter of 1970. Gulf landings are expected to continue close to last year's second quarter landings.

Meal production from tuna, mackerel, and anchovies in April-June 1971 is expected to be up from last year. Tuna landings were down in January and February. Landings are expected to be higher during the second quarter this year than a year because of the longer season for yellowfin fishing. Consequently, more scrap will be available for fish meal production.

Imports of fish meal are expected to be a greater proportion of the total quantity of fish meal available during the second quarter this year than a year ago. Slightly declining prices of Peruvian meal during the first 3 months of this year suggest that imports will increase. The average price of Peruvian fish meal in East Coast ports averaged about $177 per ton in March this year. If this price continues during the second quarter, we estimate that about 160,000 tons of fish meal will be imported. With a price of $170 per ton the imports would probably increase to about 170,000 tons. Total supplies of fish meal in the United States in April-June 1971, including domestic production and imports, would then be 230,000 to 250,000 tons.

Peru provided about three-fourths of United States imports of fish meal during the second quarter of 1970. This proportion will likely be higher in April-June this year. We estimate that United States imports from Peru will be 125,000 to 135,000 tons—compared to 91,000 tons a year ago.

As indicated earlier, fish meal stocks in Peru were about 654,000 metric tons on January 1, at the beginning of the closed season for most fishing ports. First quarter production was an estimated 365,000 metric tons. This includes 225,000 metric tons which equals the March catch quota of 1.2 million metric tons in processed form. If the monthly quotas for the second quarter equal that of March and the season is closed in the middle of June (June 11 in 1970), second quarter production would be about 560,000 metric tons. Peru's exports during the first quarter were an estimated 350,000 metric tons—about a third below the exports of last year's same period. It the claims of substantial sales during the first quarter on future contracts are correct, the second quarter exports may be considerably higher than those of the first quarter. We estimate that the exports during the second quarter will be about 580,000 metric tons. If consumption in Peru is about the same as a year ago, stocks would be about 670,000 metric tons at the beginning of the second quarter and about 650,000 metric tons at midyear—compared to 440,000 and 477,000 tons at the corresponding dates a year ago.

U.S. imports of fish meal from other FEQ countries during the second quarter are also expected to be higher this year than the 1970 April-June imports of 16,000 tons.

Imports from Canada may be close to or slightly below last year's second quarter because of smaller production of herring meal.

Demand

About 785 million broiler chicks are expected to be placed on feed in the second quarter of 1971—about 5 percent less than in the same quarter last year. The ratio between the price of fish meal and the price of soybean meal was about 2.13 : 1 during the fourth week of March. On the basis of the above broiler placements and assuming that the above price ratio continues during the second quarter this year, we estimate that 230,000 to 240,000 tons of fish meal will be used in the second quarter of 1971.

The slight drop in the price of fish meal during the first 3 months in 1971 suggests that the above price ratio may decline slightly, in which event the use of fish meal would increase. If the ratio were to decrease to an average of 2 : 1 in the second quarter, the use of fish meal could be as high as 250,000 tons.

FISH SOLUBLES

REVIEW: 1970

Supply

Supplies of Fish Solubles--Up From Last Year

The total amount of fish solubles available (excluding stocks) in the United States in 1970 was 97,600 tons—up about 19 percent from 1969 (table 20). Domestic production accounted for essentially all of the total in 1970.

U.S. Production Up

About 97,200 tons of fish solubles were produced in the United States in 1970—compared to 81,700 tons in 1969. About three-fourths of the domestic solubles were made from menhaden in 1970—the same as in 1969. The Gulf Coast area produced 70 percent of the menhaden solubles last year compared to a slightly larger share a year before. The value of production of fish solubles was about $5.1 million—compared to $4.1 million a year before.

Imports of Fish Solubles in 1970--474 Tons

Fish soluble imports were 474 tons in 1970—compared to 161 tons in 1969. The average imports of 1965—69 were about 3,000 tons.

Demand

The annual average price of menhaden solubles, as quoted by brokers in New York City, was $51.90 per ton in 1970—up $2.30 from the 1969 average but down $1.00 from the 1968 annual average (table 21). The margin between the prices of menhaden meal and menhaden solubles increased from $124.70 in 1969 to $132.90 in 1970, making prices of solubles increasingly favorable in relation to meal prices. Since solubles include about 31 percent protein and menhaden meal has a 60 percent protein content, solubles appear to be a relatively inexpensive source of protein. Although improved from the previous year, sales of fish solubles were relatively slow in 1970, despite their price advantage. Apparently the price advantage was not enough to offset the expenditure of changing feed processing operations to include small quantities of solubles in the feed.

Table 20.--Total fish solubles available in the United States: production plus imports, by month, 1968-71

Month	1968	1969	1970 1/	1971 1/
	Thousand short tons			
January	0.6	0.6	1.3	1.3
February	.7	1.4	2.1	1.3
March	2.3	1.6	2.5	
April	4.1	5.0	3.1	
May	6.3	11.3	10.0	
June	10.8	12.6	16.2	
July	14.4	11.7	19.1	
August	11.8	10.5	14.3	
September	9.0	12.8	11.7	
October	6.1	6.5	10.0	
November	4.3	4.0	4.5	
December	3.2	3.9	2.9	
Total 2/	73.6	81.9	97.6	

1/ Preliminary.
2/ Figures may not add to total because of rounding.

Table 21.--Average monthly price of menhaden solubles 1/ f.o.b. East Coast plants, 1968-71

Month	1968	1969	1970	1971
	Dollars per short ton			
January	60.50	51.25	51.25	51.25
February	63.75	51.25	50.90	51.25
March	61.25	49.40	51.75	51.25
April	56.25	47.75	52.80	
May	54.05	47.50	2/54.70	
June	53.75	49.75	2/54.30	
July	53.50	51.25	51.90	
August	52.50	49.40	50.45	
September	51.90	48.75	48.70	
October	51.50	50.60	50.60	
November	51.55	51.25	50.65	
December	51.25	52.50	49.70	
Average 3/	52.90	49.60	51.90	

1/ In tank cars; prices quoted by brokers at New York City.
2/ F.o.b. Gulf Coast plants only.
3/ Weighted average.

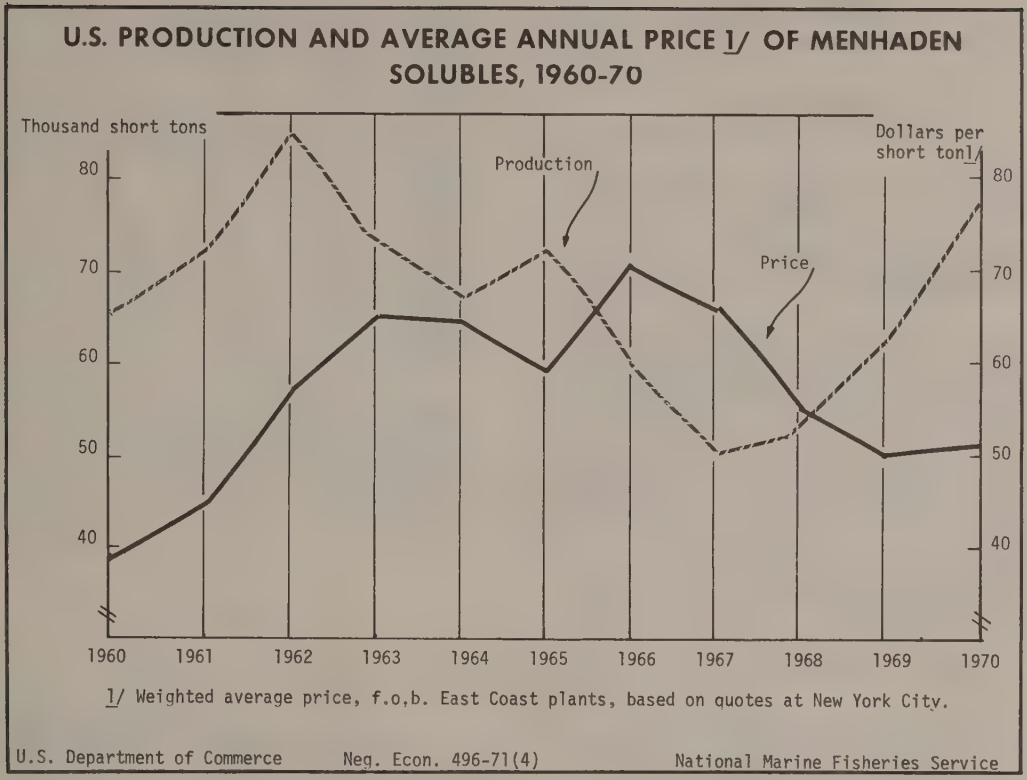

Figure 8

OUTLOOK: APRIL-JUNE 1971

Supply

Because fish solubles are a byproduct of fish meal, their production tends to vary in accordance with production of fish meal. On the basis of this relationship, we estimate that production of fish solubles during the second quarter of 1971 will be about 25,000 tons.

U.S. plants produced about 28,800 tons of fish solubles during the second quarter of 1970 and about the same amount in 1969. There were no imports in that period in those years. Imports are also expected to be unimportant in the second quarter of 1971.

Demand

Prices of menhaden solubles increased slightly in January from the low at the end of 1970. Monthly averages were $51.25 per ton, f.o.b. East Coast plants in January and February. The margin between the price of menhaden meal and the price of menhaden solubles was $132.95 per ton in February compared to $145.60 per ton a year ago. These margins indicate that the price of solubles was more likely to increase the use of this product a year ago than at the beginning of 1971. Feed mixers are not expected to increase their use of solubles over last year, if this price relation continues.

FISH OIL

REVIEW: 1970

Supply

Fish Oil Production in 1970--Highest Since 1962

Fish oil production in the United States was 193.7 million pounds in 1970—up 15 percent from 1969—the highest production since 1962 (table 22).

About 90 percent of the fish oil was made from menhaden in 1970—a slightly larger percentage than a year before (table 23 and fig. 9). The average oil yield of menhaden in 1970 was 10 percent of the landed weight. This relatively high average yield was due to high oil yields of Gulf menhaden which provided

Table 22.--U.S. production of fish oil 1/ by month, 1968-71

Month	1968	1969	1970 2/	1971 2/
	Million pounds			
January	0.6	0.6	0.6	1.4
February	.3	.6	.6	0.5
March	.6	.6	.6	
April	4.0	5.9	2.9	
May	10.1	20.6	21.7	
June	21.8	27.7	38.3	
July	36.6	29.8	39.9	
August	30.9	26.6	39.2	
September	27.3	28.7	23.7	
October	20.8	13.6	16.8	
November	12.2	8.4	6.4	
December	6.5	5.0	3.0	
Total 3/	171.7	168.0	193.7	

1/ Excludes small amount of whale oil.
2/ Preliminary.
3/ Figures may not add to total because of rounding.

Table 23.--Quantity and value of U.S. fish oil 1/ production by raw material source, 1965-69 average, 1969, and 1970

Source	Quantity			Percent of total U.S. production		
	1965-69 average	1969	1970 2/	1965-69 average	1969	1970 2/
	Million pounds			Percent		
Menhaden	144.4	149.2	174.9	88.6	88.7	90.3
Anchovy	1.5	4.9	6.2	0.9	2.9	3.2
Herring	7.0	3.5	5.4	4.3	2.1	2.8
Tuna, mackerel	4.6	4.3	3.5	2.8	2.6	1.8
Unclassified	5.5	6.3	3.7	3.4	3.7	1.9
Total 3/	163.1	168.0	193.7	100.0	100.0	100.0
Source	Value			Percent of total value		
	Million dollars			Percent		
Menhaden	8.7	8.3	16.1	88.0	90.2	93.1
Anchovy	0.1	0.2	0.4	1.0	2.2	2.3
Herring	.4	.2	.3	4.0	2.2	1.7
Tuna, mackerel	.2	.1	.2	2.0	1.1	1.2
Unclassified	.5	.4	.3	5.0	4.3	1.7
Total	9.9	9.2	17.3	100.0	100.0	100.0

1/ Excluding whale oil.
2/ Preliminary.
3/ Figures may not add to total because of rounding.

four-fifths of the total menhaden oil. The share of the menhaden oil made in the Atlantic Coast area was about the same as a year before despite the sharp increase in the catch of Atlantic menhaden. The increase in oil production on the Atlantic Coast was relatively less than the increase in landings because the oil yield of Atlantic menhaden was down sharply from th& previous year. A contributing factor to this decreased oil yield was that nearly 80 percent of menhaden caught on the Atlantic were 1-year-old or younger in 1970-compared to about 60 percent a year before. Younger fish tend to have small oil yields. In 1970, nearly 8 percent of total fish oil came from anchovies, tuna, mackerel, and herring.

The value of fish oil production was $17.3 million—highest on record. Menhaden oil alone accounted for $16 million—about twice as much as a year before. Value of oil from herring, tuna, mackerel, and anchovy also increased from the previous year (table 23).

Demand

Industrial Use of Fish Oil in 1970--Down From 1969

About 31.4 million pounds of fish oil were used in the United States in industrial products other than animal feed in 1970. This was about 3 million pounds less than a year before and continued the downward trend of the domestic use of fish oil (table 24 and fig. 10). The relatively high price of fish oil compared to competing oils was probably the main reason for the decreased use of fish oil in the United States in 1970.

Table 24.--Industrial use of fish oil in the United States by month, 1968-71 1/

Month	1968	1969	1970 2/	1971 2/
	Million pounds			
January	2.6	1.8	3.1	2.2
February	2.6	3.1	2.9	
March	3.0	3.1	2.4	
April	2.5	3.2	2.8	
May	2.6	1.9	3.2	
June	2.5	3.9	3.2	
July	2.7	2.2	2.7	
August	2.2	2.5	2.0	
September	2.8	3.3	2.8	
October	2.5	3.0	2.4	
November	2.4	3.3	1.9	
December	1.6	2.8	2.0	
Total 3/	30.0	34.1	31.4	

1/ Includes marine mammal oil other than sperm oil and some hydrogenated fats (vegetable and animal) and other fats and oils in process.
2/ Preliminary.
3/ Figures may not add to total because of rounding.

Exports of Fish Oil--Above Average

The United States exported 158.8 million pounds of fish oil in 1970—one-fifth less than in 1969 but 55 million pounds more than 1965—69 average annual exports (table 25). Menhaden oil accounted for nearly all of the U.S. exports of fish oil in 1970.

More than one-third of the United States exports of fish oil went to the Netherlands in 1970—considerably less than in 1969, when the Netherlands received more than half of United States exports of fish oil (table 26). One reason for this drop was that the Netherlands imported about one-third more fish oil from Peru this year than a year before.

Norway was the second largest market for United States fish oil in 1970, taking about 36 million pounds, a significant increase over the 1965—69 level. This was due to the low production of fish oil in Norway.

About 25 million pounds of fish oil were shipped to the United Kingdom in 1970. This was more than twice the average annual shipments of 1965—69. Sweden took about 17 million pounds of United States fish oil in 1970—about the same amount as a year before. West Germany received 13 million pounds—less than the year before.

Table 25.--U.S. exports of fish oil 1/by month, 1968-71

Month	1968	1969	1970 2/	1971 2/
	Million pounds			
January	0.9	4.0	11.1	32.2
February	6.0	8.9	0.4	4.9
March	12.6	19.8	13.9	
April	.1	21.1	4.3	
May	3/	8.8	4.4	
June	3/	15.5	2.4	
July	.1	19.3	30.3	
August	7.0	24.7	31.1	
September	3.4	7.9	37.8	
October	11.4	5.7	.2	
November	1.8	33.3	17.9	
December	21.8	27.0	4.9	
Total 4/	65.1	196.1	158.8	

1/ Excluding whale oil.
2/ Preliminary.
3/ Less than 50,000 pounds.
4/ Figures may not add to total because of rounding.

Table 26.--U.S. exports of fish oil 1/ by country of destination, 1965-69 average, 1969, and 1970

Country	1965-69 average	1969	1970 2/	Percent of total U.S. exports: 1965-69 average	1969	1970
	Million pounds			Percent		
Canada	1.2	1.3	1.4	1.2	0.7	0.9
Netherlands	41.8	110.6	57.5	40.3	56.4	36.2
Norway	3.2	-	36.0	3.1	-	22.7
Sweden	23.9	16.9	17.0	23.0	8.6	10.7
United Kingdom	10.0	16.9	24.6	9.6	8.6	15.5
West Germany	12.2	17.5	13.2	11.8	8.9	8.3
Other	11.4	32.9	9.1	11.0	16.8	5.7
Total 3/	103.8	196.1	158.8	100.0	100.0	100.0

1/ Excluding whale oil.
2/ Preliminary.
3/ Figures may not add to total because of rounding.

Table 27.--Average monthly price of menhaden oil 1/ f.o.b. East Coast plants, 1968-71

Month	1968	1969	1970	1971
	Cents per pound			
January	6.00	4.70	8.75	10.40
February	6.10	5.00	2/9.25	10.30
March	5.75	5.20	3/8.90	10.20
April	5.35	5.30	3/9.70	
May	5.25	5.25	3/10.30	
June	5.25	5.20	10.30	
July	4.85	5.25	10.40	
August	4.55	5.65	10.20	
September	4.40	6.10	9.70	
October	4.45	6.75	9.75	
November	4.40	8.20	10.10	
December	4.40	8.50	10.60	
Average 4/	4.70	5.75	10.15	

1/ Crude oil in tank cars; prices quoted by brokers at New York City.
2/ Asking price.
3/ F.o.b. Gulf Coast plants.
4/ Weighted average.

Table 28.--Average monthly price of tuna and mackerel oil 1/ at Los Angeles, 1968-71

Month	1968	1969	1970	1971
	Cents per pound			
January	3.50	3.25	3.25	6.00
February	3.25	3.10	3.50	6.00
March	3.25	3.00	3.65	6.00
April	3.25	3.00	4.10	
May	3.25	3.00	4.70	
June	3.25	3.00	4.75	
July	3.25	3.00	4.75	
August	3.25	3.10	4.95	
September	3.25	3.25	5.25	
October	3.25	3.25	5.25	
November	3.25	3.00	5.50	
December	3.25	3.00	6.00	
Average 2/	3.25	3.10	4.95	

1/ Crude oil, f.o.b. plant; prices quoted by brokers at Los Angeles.
2/ Weighted average.

Menhaden Oil Prices--Record High

The average annual price of menhaden oil, as quoted in New York City, was 10.15 cents per pound in 1970—the highest annual average on record (table 27). Prices of menhaden oil increased fairly steadily during the past 2 years. The December 1970 price was 10.60 cents per pound—the highest monthly average in 18 years. The average annual price of tuna and mackerel oil was also higher in 1970 than a year before.

The upward trend of fish oil prices in 1970 was caused by the increased consumption of fats and oils in Europe in relation to production. High prices for fish oil likely had some influence on its reduced domestic use.

During the first 3 months of 1971, the price of menhaden oil declined slightly from the December high. The February average price was 10.30 cents per pound, and the March price was 10.25 cents per pound.

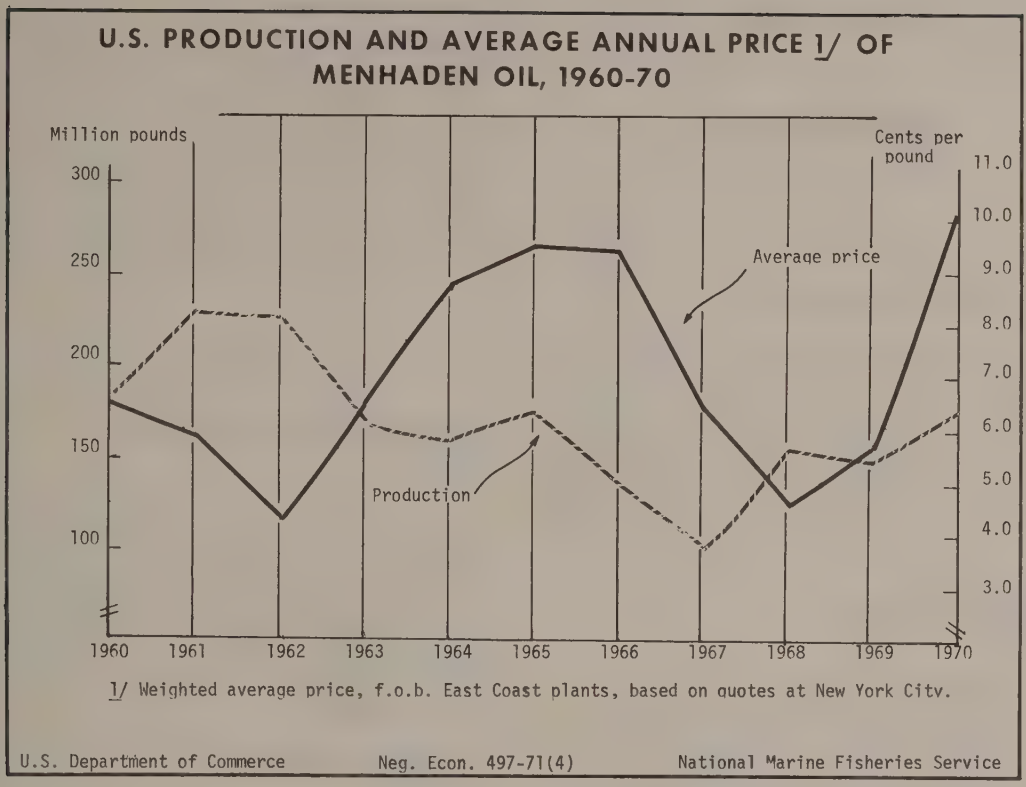

Figure 9

OUTLOOK: APRIL-JUNE 1971

Supply

We believe that domestic production of fish oil will be 50 million to 55 million pounds during the second quarter of 1971. Last year the production was nearly 63 million pounds. The estimate of the second quarter production of fish oil is based on the past production trend and on the expected production of fish meal from April to June. Most of the fish oil will again come from menhaden.

Demand

We estimate that domestic use of fish oil in the second quarter of 1971 will be nearly the same as a year ago. The use in the second quarter of 1970 was 9.2 million pounds, slightly below the 1965—69 average. The declining trend of the industrial use of fish oil suggests that the utilization of fish oil in the United States this year would be below last year. Limitations in the availability of whale oil, discussed in the next section, may, however, lead to the use of fish oil as a substitute.

U.S. exports of fish oil are greatly dependent on changes in the world supply and demand of competing oils, as well as availability of fish oil in the competing countries. World production of oils and fats is expected to increase sharply in 1971 and surpass the increase in consumption. Heavier competition from other countries that export fish oil is also expected. Slightly declining prices of menhaden oil in January and February of this year reflect the increasing competition.

WHALE OIL

REVIEW: 1970

Supply

U.S. Whale Oil Production Low

Whale oil production in the United States is a small fraction of the total available quantity of oil. About 700,000 pounds of whale oil were produced in the United States in 1970—less than half of the production of the previous year and about one-third of the 1965—69 average production (table 29). Nearly 90 percent of the production was sperm oil. The value of whale oil production in 1970 was about $46,000.

Whale Oil Imports--Up One-Fifth From 1969

The United States imported 55.6 million pounds of whale oil in 1970, up from 1969 but slightly less than the 1965—69 average annual imports (table 29). Japan remained the major source for United States whale oil imports in 1970, providing nearly 23 million pounds or about 41 percent of the total imports. Peru shipped 14.4 million pounds of whale oil to the United States in 1970 and the Netherlands provided 5.5 million pounds.

On June 2, 1970, the U.S. Government placed eight species of whales on the "U.S. List of Endangered Foreign Fish and Wildlife" to prevent their extinction. The list contains three commercially important species: sperm, sei, and finback whales. This ruling restricts imports of sperm oil and other whale oil. If existing importers can show that they would suffer economic hardship because of this ruling, special import permits will be issued to the importers for contracts made before the effective date of this order (June 3, 1970).

Demand

Domestic Use of Whale Oil--Down 8 Percent From 1969

Since whale oil has few substitutes in many commercial uses, the demand has remained high during the past 10 years (fig. 10). Oil from sperm whales is used mainly in cosmetics, as a lubricant, and in the production of fatty acids. The United States used about 38 million pounds of whale oil in 1970. This amount was nearly 2 million pounds more than the 1965—69 annual average.

U.S. Exports of Whale Oil--Up From 1969

The United States exported 5.1 million pounds of whale oil in 1970—up one-half from the 1969 exports (table 29). About half of United States exports of whale oil went to Canada in 1970.

Table 29.—Whale and sperm oil production, imports, exports, and domestic use in the United States, 1960-70

Year	Production	Imports	Exports	Domestic Use 1/
	Million pounds			
1960	3.3	37.5	1.4	46.9
1961	3.5	60.5	1.2	46.6
1962	2.6	69.2	2.7	35.2
1963	2.1	67.3	5.6	36.1
1964	3.2	58.9	5.6	33.6
1965	2.7	77.2	5.9	34.8
1966	1.4	58.2	4.4	29.0
1967	2.5	51.4	1.8	37.2
1968	2.4	57.5	4.1	39.9
1969	1.7	46.0	3.3	41.6
1970 2/	0.7	55.6	5.1	38.2

1/ Sperm oil only.
2/ Preliminary.

U.S. UTILIZATION OF INEDIBLE FISH OIL AND SPERM OIL, 1960-70

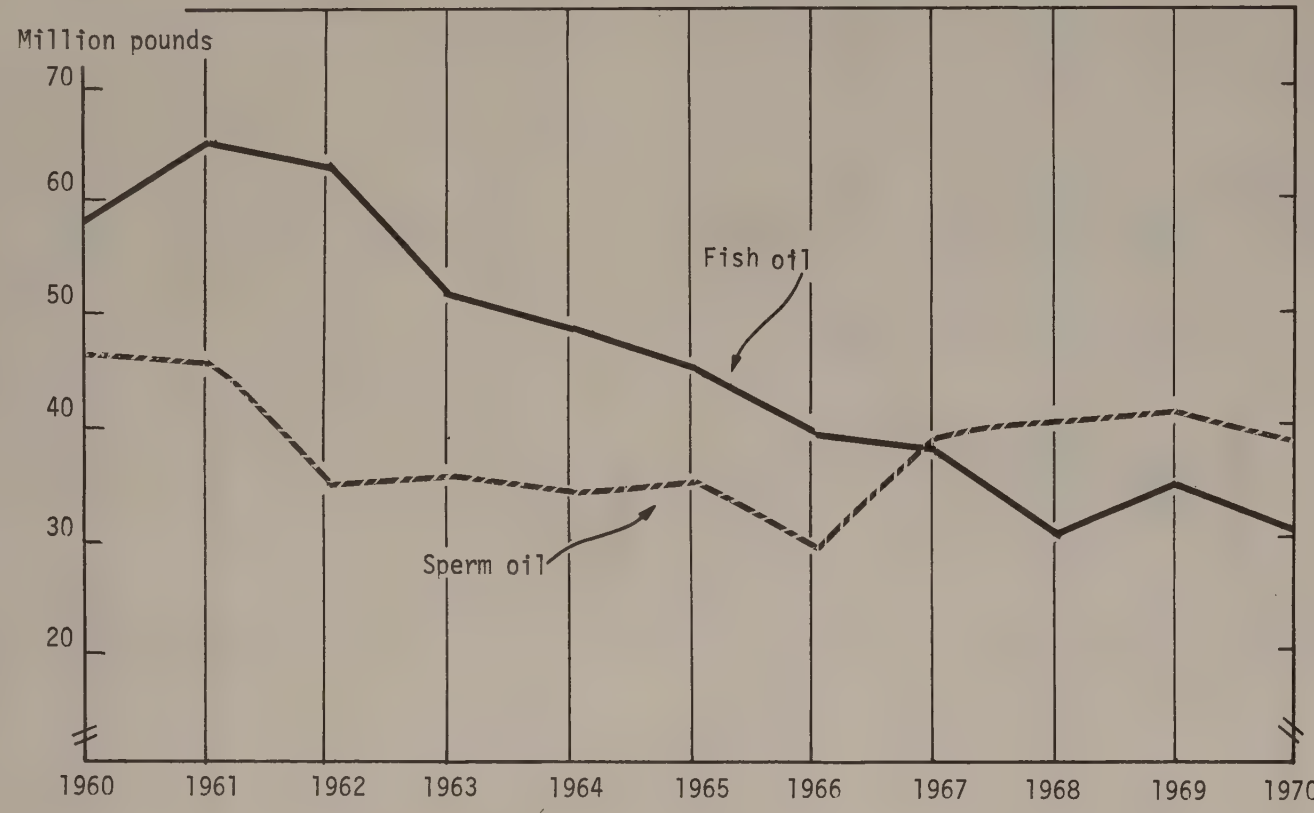

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Figure 10

Table 30.--U.S. imports of whale oil by country of origin, 1965-69 average, 1969 and 1970

Country	1965-69 average	1969	1970 1/	Percent of total U.S. imports: 1965-69 average	1969	1970
	Million pounds			Percent		
Japan	26.4	21.0	22.8	45.5	45.7	41.0
Netherlands	4.8	3.6	5.5	8.3	7.8	9.9
Peru	9.0	11.0	14.4	15.5	23.9	25.9
Other	17.8	10.4	12.9	30.7	22.6	23.2
Total	58.0	46.0	55.6	100.0	100.0	100.0

1/ Preliminary.

OUTLOOK: 1971

The placements of eight species of whales on the U.S. list of endangered foreign fish and wildlife will stop the imports of sperm and other whale oil by the end of 1971. This ruling also limits the imports in 1971 because only the amount of oil that was in the contracts made before the ruling will be allowed to be imported.

The U.S. Government has also proposed to terminate domestic licensing of commercial hunting of whales listed as endangered species. This action likely will end the domestic production of whale oil during this year.

WHALE CATCH, 1970

Month	Fin	Gray	Sei	Sperm	Total
	Number				
January	-	-	-	1/ 1	1
March	-	-	-	1/ 9	9
May	-	-	-	1/11	11
June	2	-	1	-	3
July	1	-	3	-	4
August	2	-	-	6	8
September	-	-	-	1/ 4	4
October	-	-	-	1/ 9	9
November	-	-	-	1/19	19
December	-	-	-	1/ 5	5
Total 1970	5	-	4	1/64	73
Total 1969	31	2/74	10	3/68	183

1/ The taking of 1 sperm whale in January, 9 sperm whales in March, 6 sperm whales in May, 1 sperm whale in September, 2 sperm whales in October, 8 sperm whales in November, and 3 sperm whales in December was authorized by Special Scientific Permit No. 1970-1.
2/ The taking of 74 gray whales was authorized by Special Scientific Permit No. 1969-1.
3/ The taking of 34 sperm whales was authorized by Special Scientific Permit No. 1969-5.

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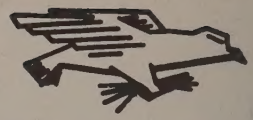

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